La nostra esperienza:
gli interventi psico-sociali

CINZIA GIULI
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Perché “My Mind Project” ?

Aumento della popolazione anziana

- Incremento deficit cognitivi e demenza

Profonde ricadute sul SSN

- Costi
- Qualità di vita

Necessità di interventi

- **Approccio multidisciplinare**
- **Interventi psico-sociali**

Background

È possibile recuperare e/o potenziare alcune funzioni cognitive

Prevenzione e/o riduzione del rischio di declino

Approccio multidimensionale

My Mind Project:

The effects of cognitive training for elderly

Ministero della Salute

Finanziamento Bando GR

Ricerca Finalizzata

Ministero Salute

(Grant n.154/GR-2009-1584108)

- Trial clinico
  - Intervento
  - Prospettico
  - Randomizzato
- Studio effetto dell'intervento
  - Successi-insuccessi
- Anziani con diverso status cognitivo
- Aspetti multidisciplinari
- 3 Fasi di follow-up


Corso di Formazione
Teorico-Pratico per la Gestione
del Paziente Anziano Fragile
2008
I edizione
12-14
Maggio
II edizione
13-15
Ottobre
Presidio Ospedaliero di Ricerca FERMO
UOC Geriatria
La gestione
dell'iperglicemia
in ospedale
"Un amico al tuo fianco"
formazione assistenziale
rivolta al coregiver del
paziente ospedalizzato
"La Palestra della Memoria": l'efficacia
di un intervento di training cognitivo per
anziani cognitivamente sani
USCITA DI
EMERGENZA
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Obiettivo Principale

Studio dell'effetto dell'intervento cognitivo in 3 gruppi di anziani marchigiani

- Cognitivamente SANI
- MCI
- AD grado lieve-moderato

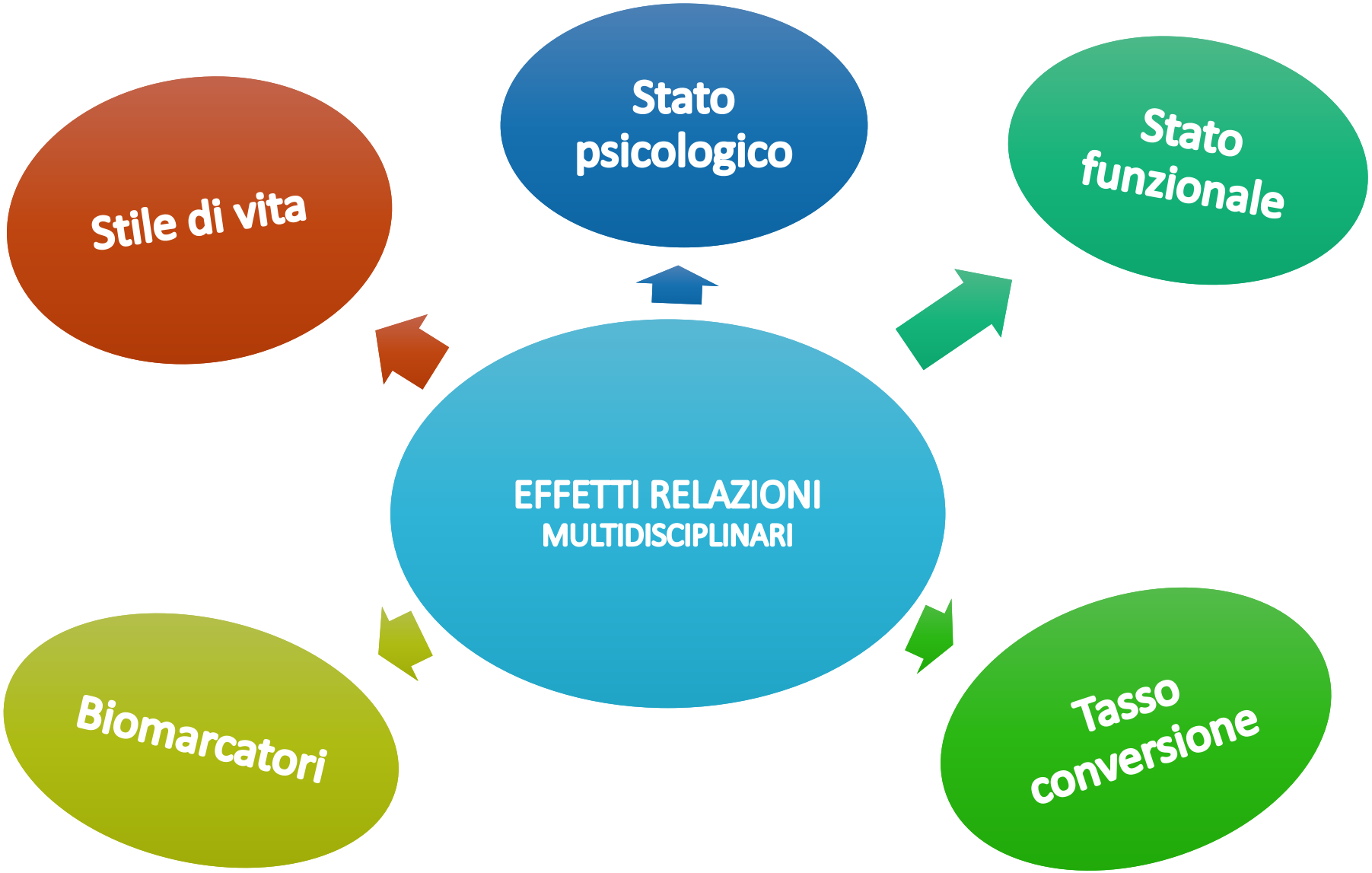
3 fasi di Follow-up

- **F1** (dopo la fine dell'intervento)
- **F2** (a distanza di 6 mesi)
- **F3** (a distanza di 2 anni)

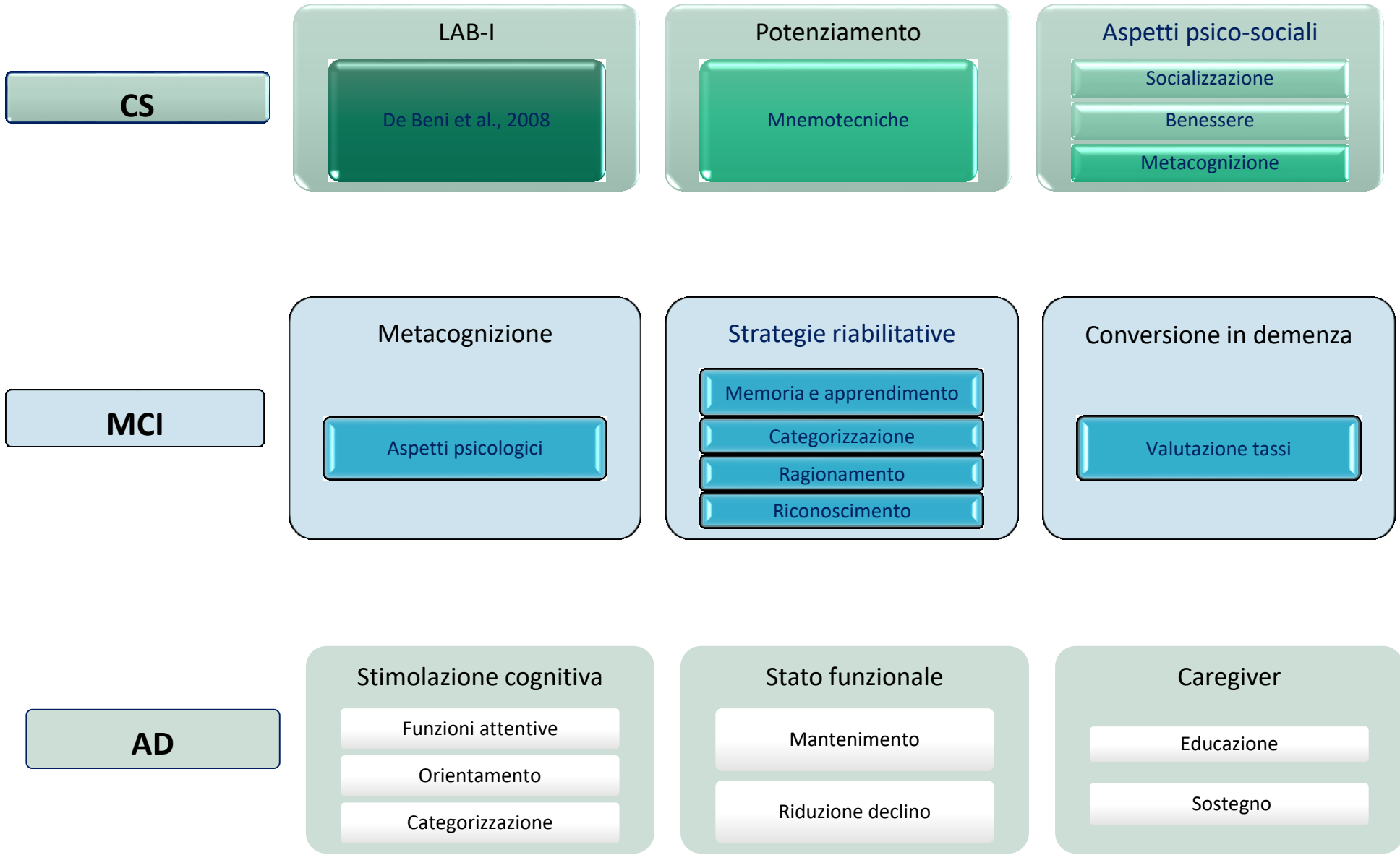
Outcome Primario

Sani	• Test di memoria
MCI	• Test di apprendimento
AD	• ADAS - Cog

Outcomes Secondari



Intervento del Gruppo Sperimentale



RISULTATI PRINCIPALI

Campione

321 soggetti

109 MCI
54 GS

101 AD
51 GS

111 sani
55 GS

REJUVENATION RESEARCH
Volume 19, Number 6, 2016
Mary Ann Liebert, Inc.
DOI: 10.1089/rej.2015.1791

The Effects of Cognitive Training for Elderly: Results from *My Mind Project*

Cinzia Giuli,[1] Roberta Papa,[2] Fabrizia Lattanzio,[3] and Demetrio Postacchini[1]

Abstract

Cognitive decline and dementia represent very important public health problems that impact the ability to maintain social function and independent living. The aim of this study was to investigate the effects of a nonpharmacological intervention consisting of comprehensive cognitive training in elderly people having one of three different cognitive statuses. In all, 321 elderly people with a diagnoses of mild–moderate Alzheimer's disease (AD), with mild cognitive impairment (MCI) and without cognitive decline were randomly assigned to two groups: experimental group (EG, who underwent intervention) and control group (CG), according to a prospective randomized intervention study. In the three groups, immediately after the end of the intervention, we observed a significant effect on some cognitive and noncognitive outcomes in the EGs. At the end of the intervention, we found an intermediate intervention effect on the Alzheimer's Disease Assessment Scale (ADAS) score of subjects with AD, as well as on functional status, as measured by using the Instrumental Activities of Daily Living scale. A significant intervention effect was also observed on enhancement of auditory verbal short-term memory and subjective memory complaints of subjects with MCI. The group of subjects without cognitive decline obtained a significant intervention effect on subjective complaints outcomes. The obtained results demonstrated that participation in the intervention could improve performance with respect to specific cognitive functions and psychological statuses. The role of healthy lifestyle programs, such as the use of comprehensive interventions, has been shown to be efficient for enhancing memory and other abilities in aged individuals with and without cognitive decline.

Keywords: multi-component cognitive training, Alzheimer's disease, mild cognitive impairment, comprehensive intervention, elderly

Caratteristiche del campione

TABLE 2. SAMPLE CHARACTERISTICS BY GROUP AND INTERVENTION

	Groups									
	Healthy (n=*100*)			*MCI* (n=*97*)			*AD* (n=*95*)			
	EG (n=*47*)	*CG* (n=*53*)	*Sign.*[a]	*EG* (n=*48*)	*CG* (n=*49*)	*Sign.*[a]	*EG* (n=*48*)	*CG* (n=*47*)	*Sign.*[a]	p-*Value*[b]
Age (years)	72.7 (5.2)	72.2 (6.6)	n.s.	76.0 (6.3)	76.5 (5.7)	n.s.	76.5 (4.3)	78.7 (5.9)	*	<0.001
Gender			n.s.			n.s.			n.s.	0.020
Male	17	23		35	39		40	28		
Female	83	77		65	61		60	72		
Education (years)	11.1 (4.5)	8.6 (4.4)	**	6.7 (3.8)	5.3 (3.0)	*	5.9 (4.1)	4.5 (2.3)	*	<0.001
Marital status			n.s.			n.s.			n.s.	0.010
Married/cohabiting	47	58		62	76		73	55		
Widowed	40	34		38	22		25	43		
Other	13	8		0	2		2	2		
MMSE	27.9 (1.1)	28.0 (1.1)	n.s.	25.7 (1.8)	25.8 (1.9)	n.s.	20.2 (3.7)	20.3 (3.5)	n.s.	<0.001
GDS	8.9 (4.7)	6.6 (5.0)	*	8.6 (4.8)	8.8 (4.0)	n.s.	8.4 (6.2)	8.1 (5.3)	n.s.	n.s.
Number of diseases (range 0–11)	3.7 (1.7)	3.2 (2.0)	n.s.	3.3 (1.6)	3.6 (1.7)	n.s.	4.4 (1.7)	4.4 (1.7)	n.s.	<0.001
BADL	5.9 (0.3)	5.9 (0.3)	n.s.	5.9 (0.3)	5.8 (0.4)	n.s.	5.1 (1.4)	5.1 (1.0)	n.s.	<0.001
IADL	7.9 (0.3)	7.9 (0.4)	n.s.	6.9 (1.4)	6.9 (1.5)	n.s.	3.3 (2.3)	3.4 (1.8)	n.s.	<0.001

Data presented as percentages and mean (SD).
[a]Chi-square for frequencies or *t*-test for means, comparison of EG and CG within each group.
[b]Chi-square for frequencies or *t*-test for means, comparison of groups (healthy, MCI, AD).
*p-value < 0.05; ** < 0.01.
CG, control group; EG, experimental group; n.s., not significant.

Effetto SANI

TABLE 3. ASSESSMENT AT BASELINE AND AFTER THE INTERVENTION IN THE GROUP OF HEALTHY ELDERLY

	EG			*CG*			*Group × time interaction*	
	Baseline	*Follow-up*	p-*Value*[a]	*Baseline*	*Follow-up*	p-*Value*[a]	F[b]	*Effect size*
Forward verbal span	4.39 (1)	5.08 (1)	**<0.001**	4.79 (1)	4.82 (0.9)	0.814	**7.68****	0.079
Backward verbal span	3.36 (1)	3.6 (1.2)	0.070	3.25 (1.1)	3.08 (1.2)	0.316	2.97	0.033
List of words	4.35 (1.3)	5.15 (1.5)	**0.001**	4.71 (1.6)	4.71 (1.6)	1.00	**6.66****	0.070
MAC-Q	24.77 (3.6)	19.21 (4.1)	**<0.001**	24.04 (3.3)	24.45 (3.3)	0.207	**53.99*****	0.386
Confidence	8.77 (1.6)	10.09 (1.6)	**<0.001**	9.26 (1.6)	8.9 (1.9)	0.063	**14.52*****	0.146
GDS	9.49 (5)	9.09 (4.6)	0.471	6.47 (5.1)	7.94 (5.3)	**<0.001**	**5.37***	0.059
PSS	25.07 (5.9)	23.19 (5.9)	**0.019**	22.12 (6.3)	23.63 (6)	0.050	**7.18****	0.077
ADL	5.93 (0.3)	5.91 (0.3)	0.323	5.86 (0.4)	5.86 (0.4)	1.00	2.14	0.024
IADL	8 (0)	8 (0)	1.00	7.84 (0.7)	7.82 (0.7)	0.322	0.55	0.006

Data presented as mean (SD).

[a]Paired *t*-test between baseline and follow-up assessment.

[b]Repeated-measures ANOVA testing interaction of intervention (EG vs. CG) per time (baseline vs. follow-up) for each outcome; adjusted for age and years of education. *F* test and *p*-value (*<0.05; **<0.01; ***<0.001); effect size is partial eta squared ($\eta_{partial}^2$) for group × time.

Significant values are in bold.

Effetto MCI

TABLE 4. ASSESSMENT AT BASELINE AND AFTER THE INTERVENTION IN THE GROUP OF MILD COGNITIVE IMPAIRMENT

	EG			*CG*			*Group × time interaction*	
	Baseline	*Follow-up*	p-*Value*[a]	*Baseline*	*Follow-up*	p-*Value*[a]	F[b]	*Effect size*
Forward verbal span	4.52 (0.8)	4.68 (0.9)	0.211	4.69 (0.8)	4.5 (0.8)	0.095	**3.96***	0.042
Backward verbal span	2.76 (0.9)	3.04 (0.9)	0.051	2.75 (0.8)	2.40 (0.7)	**0.004**	**12.31*****	0.120
GDS	10.41 (6.2)	9.78 (6)	0.286	9.17 (5)	10.38 (5.1)	0.093	**4.97***	0.052
MAC-Q	27.37 (3.7)	23.43 (4.5)	**<0.001**	25.69 (3.1)	26.44 (3.8)	0.099	**31.10*****	0.257
PSS	19.7 (7.7)	18.41 (8.1)	0.311	18.73 (7.5)	19.96 (8.8)	0.313	2.52	0.027
MMSE	25.85 (1.9)	25.62 (2.5)	0.501	25.85 (2.3	25.43 (3.2	0.178	0.02	0.000
ADL	5.83 (0.4)	5.85 (0.4)	0.660	5.83 (0.4)	5.75 (0.4)	0.103	1.07	0.012
IADL	7.43 (0.9)	7.43 (0.9)	1.00	7.5 (0.8)	7.17 (1.3)	**0.004**	**5.55***	0.058
Prose memory test	7.05 (3.8)	8.78 (3.9)	**0.004**	7.2 (4.5)	6.56 (4.2)	0.197	**8.57****	0.088
Word pairing learning test	8.45 (3.6)	9.6 (4.7)	**0.018**	6.69 (3.2)	6.41 (2.9)	0.478	**6.02***	0.062
Supra-span of Corsi	4.84 (0.8)	5.11 (0.8)	**0.040**	5.04 (0.7)	4.8 (0.9)	**0.035**	**9.18****	0.094
Semantic word fluency test	1.87 (1.3)	2 (1.5)	0.323	2.19 (1.3)	2.19 (1.3)	1.00	0.52	0.006
Phonemic word fluency test	29.23 (8.2)	30.85 (8.6)	0.083	24.39 (7.9)	23.85 (5.9)	0.477	3.65	0.042
Attentive matrices	38.61 (10.1)	42.15 (9.9)	**<0.001**	40.75 (9.6)	39.16 (10)	**0.034**	**21.47*****	0.194

Data presented as mean (SD).

[a]Paired *t*-test between baseline and follow-up assessment.

[b]Repeated-measures ANOVA testing interaction of intervention (EG vs. CG) per time (baseline vs. follow-up) for each outcome; adjusted for age and years of education. *F* test and *p*-value (*<0.05; **<0.01; ***<0.001); effect size is partial eta squared ($\eta_{partial}^2$) for group × time.

Significant values are in bold.

Effetto AD

TABLE 5. ASSESSMENT AT BASELINE AND AFTER THE INTERVENTION IN THE GROUP OF ALZHEIMER'S DISEASE

	EG			*CG*			*Group × time interaction*	
	Baseline	*Follow-up*	p-*Value*[a]	*Baseline*	*Follow-up*	p-*Value*[a]	F[b]	*Effect size*
Forward verbal span	3.9 (1)	4.23 (1)	**0.004**	4.36 (0.9)	4.19 (1.1)	0.232	**7.69****	0.083
Backward verbal span	1.91 (0.9)	2.23 (1.1)	**0.017**	2.11 (1.0)	1.89 (1.0)	0.168	**9.36****	0.099
GDS	9.78 (7)	9.96 (6.9)	0.745	8.65 (5.8)	9.89 (6.1)	**0.031**	1.69	0.020
MMSE	20.48 (4.2)	20.5 (4.5)	0.976	20.11 (4.2)	20.14 (4)	0.922	0.02	0.000
ADL	5.39 (0.9)	5.43 (0.8)	0.486	4.98 (1.2)	4.87 (1.2)	**0.024**	**4.81***	0.054
IADL	3.37 (1.9)	3.63 (1.9)	**0.009**	3.37 (2)	3.13 (2)	**0.002**	**16.53*****	0.163
Prose memory test	4.71 (3.8)	5.34 (3.6)	0.220	3.49 (3.4)	3.61 (3.2)	0.722	1.20	0.014
Word pairinglearning test	4.1 (2.4)	4.75 (2.9)	**0.044**	4.25 (2.7)	4.08 (2.8)	0.617	3.34	0.038
Supra-span of Corsi	3.99 (1.3)	4.03 (1.1)	0.772	4.01 (1.2)	4 (1.3)	0.931	0.01	0.000
Semantic word fluency test	0.87 (1.2)	1.02 (1.1)	0.181	1 (1.1)	0.83 (1)	**0.044**	**4.75***	0.053
Attentive matrices	26.4 (8.6)	28.35 (10.1)	**0.036**	29.76 (9)	29.15 (8.6)	0.175	**12.62*****	0.136
ADAS	20.6 (9.3)	17.3 (9.2)	**<0.001**	19.6 (9.6)	19.59 (9.2)	0.959	**10.66****	0.111

Data presented as mean (SD).

[a]Paired *t*-test between baseline and follow-up assessment.

[b]Repeated-measures ANOVA testing interaction of intervention (EG vs. CG) per time (baseline vs. follow-up) for each outcome; adjusted for age and years of education. *F* test and *p*-value (*<0.05; **<0.01; ***<0.001); effect size is partial eta squared ($\eta_{partial}^2$) for group × time.

Significant values are in bold.

Tassi di Conversione MCI-DEMENZA

17 MCI (15%)

6 F3
9 F2
2 F1

13 AD
3 VD
1 altre

10 GC
7 GS

Fase Conversione

2 F2

2 F1

3 F3

GS

DIAGNOSI TEMPESTIVA

7 F2

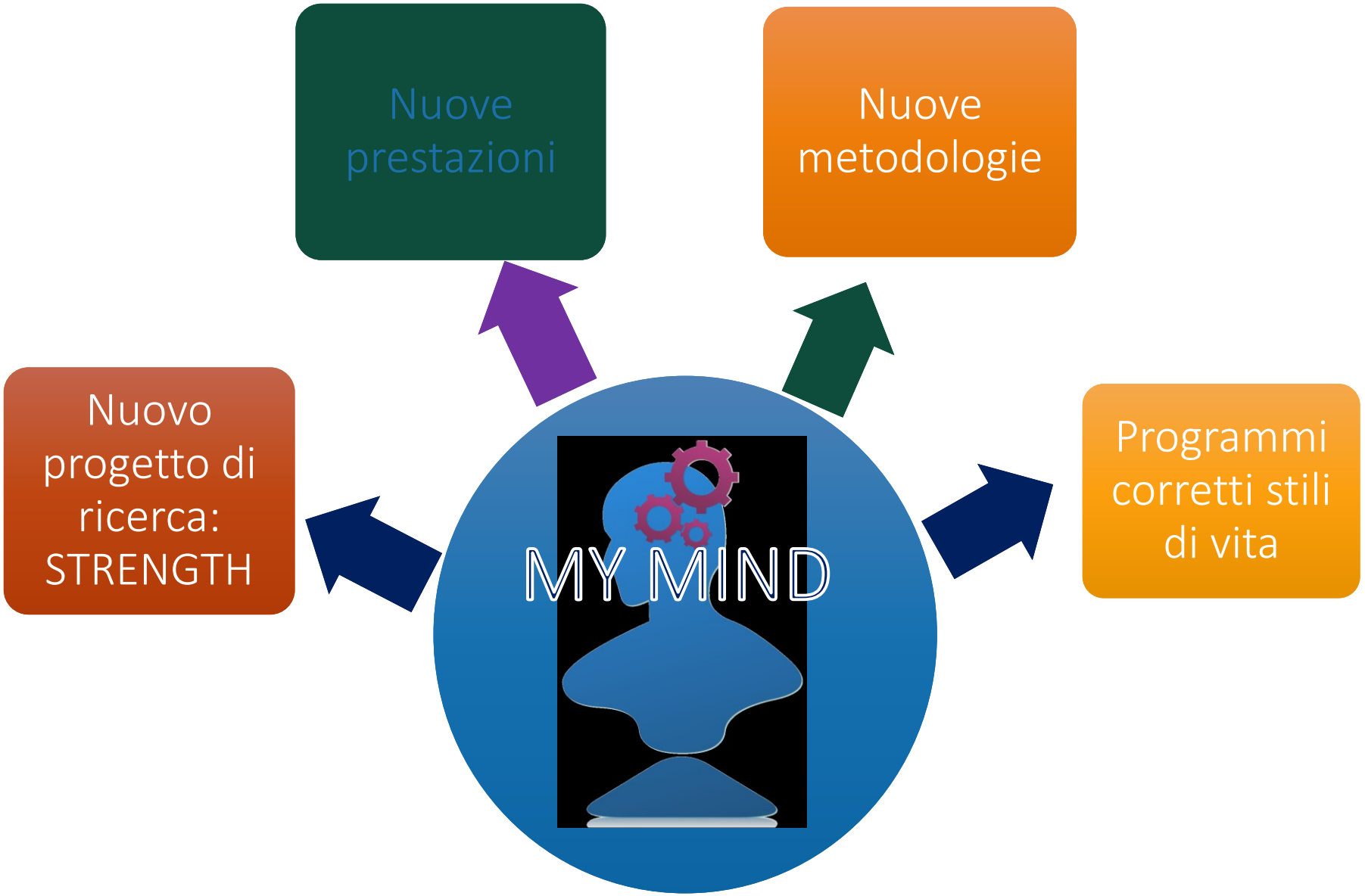
3 F3

GC

TRASFERIBILITA’ E RICADUTE

- Costi limitati
- Approccio multidimensionale e multidisciplinare
- Informazione, motivazione e psico-educazione - personalizzabile
- Ritardo della disabilità
- Trattamento preliminare MCI e diagnosi più tempestiva
- Sostegno e insegnamento interventi ai caregiver
- Mnemotecniche e strumenti da applicare a domicilio
- Metacognizione e prevenzione

Progettualità e nuove sfide



Studio degli effetti del Tango adattato e di un intervento multidimensionale nella prevenzione della demenza nell'invecchiamento: sviluppo di programmi di sano stile di vita

(n. GR-2016-02363041)

Ministero della Salute

REGIONE MARCHE


COGNITIVE DECLINE
(Galenkamp et al, Eur J Ageing, 2016)
PSYCHO-SOCIAL INTERVENTION
(Bauman et al, Gerontologist, 2016; Hackney et al, JAGS, 2015)
STRENGTH PROJECT
Clinical and functional status
Biomarkers
Psychological aspects
Quality of life
Socialization
Healthy life style
PREVENTION OF DEMENTIA
(Ngandu et al, Lancet, 2015)
Physical activity
Cognitive intervention
Metacognition
Multidisciplinary approach

Progettazione

PRINCIPAL INVESTIGATOR:

Cinzia Giuli, UOC di Geriatria - IRCCS-INRCA di Fermo

PARTNERS:

Centro Tecnologie Avanzate dell'Invecchiamento – IRCCS-INRCA di Ancona

Laboratorio di Farmacoepidemiologia Geriatrica– IRCCS-INRCA di Ancona e Cosenza

UO di Cardiologia Riabilitativa - IRCCS-INRCA di Fermo

Laboratorio di Analisi Chimico-Cliniche e Molecolari - POR IRCCS-INRCA di Ancona

Scuola Argentina Alas de Tango - Porto san Giorgio (FM)

Durata: 36 mesi

Avvio: 01/08/2019

Finanziamento Ministeriale 450.000 euro

n. GR-2016-02363041

Cofinanziamento Regione Marche

Aging Clinical and Experimental Research
https://doi.org/10.1007/s40520-020-01504-4

ORIGINAL ARTICLE

Study of the effects of adapted Tango and multidimensional intervention in pREvention of dementia in agiNG: developing healTHy lifestyle programs (STRENGTH Project)—the experimental protocol of a prospective randomised controlled trial

Cinzia Giuli[1] · Cristina Paoloni[1] · Elpidio Santillo[2] · Marta Balietti[3] · Paolo Fabbietti[4] · Demetrio Postacchini[1] · Francesco Piacenza[5]

Received: 2 September 2019 / Accepted: 5 February 2020

Abstract

Background Dementia represents a key health issue for older adults, with negative consequences on psycho-social and functional status. Treatments that counteract cognitive deficits in mild cognitive impairment (MCI) are needed to prevent or delay it.

Aim To describe the experimental protocol of the STRENGTH Project. This study investigates a multimodal intervention in older adults with MCI to improve cognitive, functional, biochemical and psycho-social aspects.

Methods The prospective randomised controlled trial will enrol 300 subjects with MCI (age ≥ 60 years). Participants will be randomly assigned to: (a) the experimental group, which will undergo sessions of adapted tango, music therapy, engagement in social activities, cognitive intervention and psycho-education for 6 months or (b) the control group, which will receive psycho-education and advice on healthy lifestyle for 6 months. All outcomes will be analysed before intervention (baseline), immediately after termination (follow-up 1), after 6 months (follow-up 2) and after 2 years (follow-up 3).

Discussion We expect that the findings of this multidisciplinary study will be useful to optimize clinical and psycho-social interventions for improving cognitive and functional status of subjects with MCI.

Conclusions This project could have a meaningful impact on National Health Systems by providing clues on multidisciplinary management of older adults affected by cognitive decline to prevent dementia.

Keywords Mild cognitive impairment · Biomarkers · Comprehensive intervention · Adapted tango · Older adults

Disegno dello Studio

Trial clinico

Prospettico

Randomizzato

Applicazione intervento psico-sociale per 6 mesi

Soggetti con MCI con età maggiore o uguale a 60 anni

Approccio multidisciplinare

Analisi successi-insuccessi

Criteri – 300 MCI

Inclusione

- Età >=di 60 anni
- Disponibilità a partecipare alle fasi di valutazione
- Presenza di caregivers
- Capacità di firmare il consenso

Esclusione

- Gravi condizioni di salute e deficit dell'apparato senso-motorio che potrebbero impedire la partecipazione allo studio
- Disordini mentali e neurologici
- Demenza

Obiettivi: Studio dell'effetto dell'intervento

Principale

- Stato cognitivo
- Outcome primario: memoria e apprendimento visuo-spaziale

Secondari

- Stato psicologico e metacognizione
- Parametri cardiovascolari
- Mobilità e abilità funzionale
- Stile di vita
- Qualità di vita
- Biomarcatori

→

EFFETTO LONGITUDINALE.

PREVENZIONE

Reclutamento

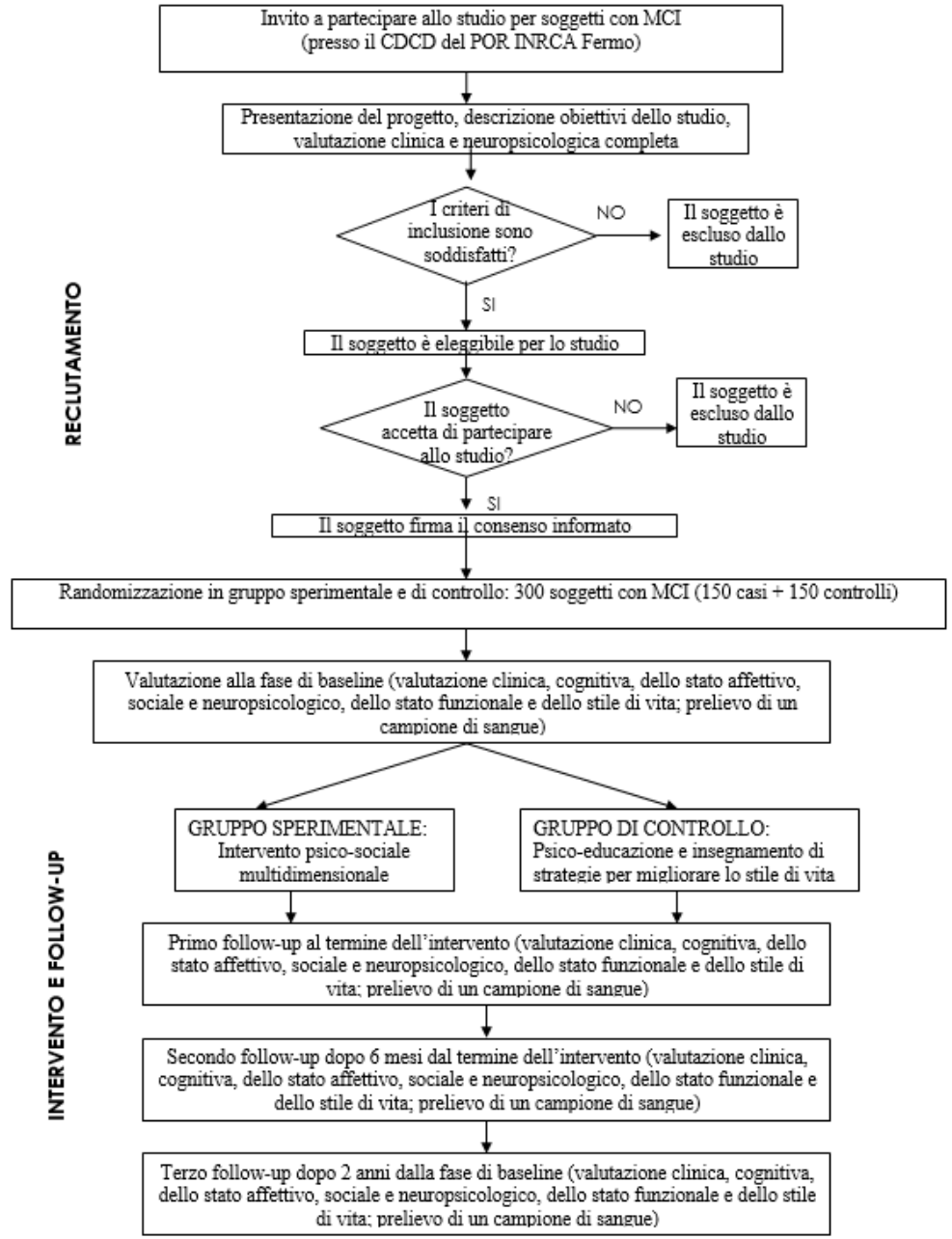
CDCD POR IRCCS-INRCA FM

Università della Terza Età

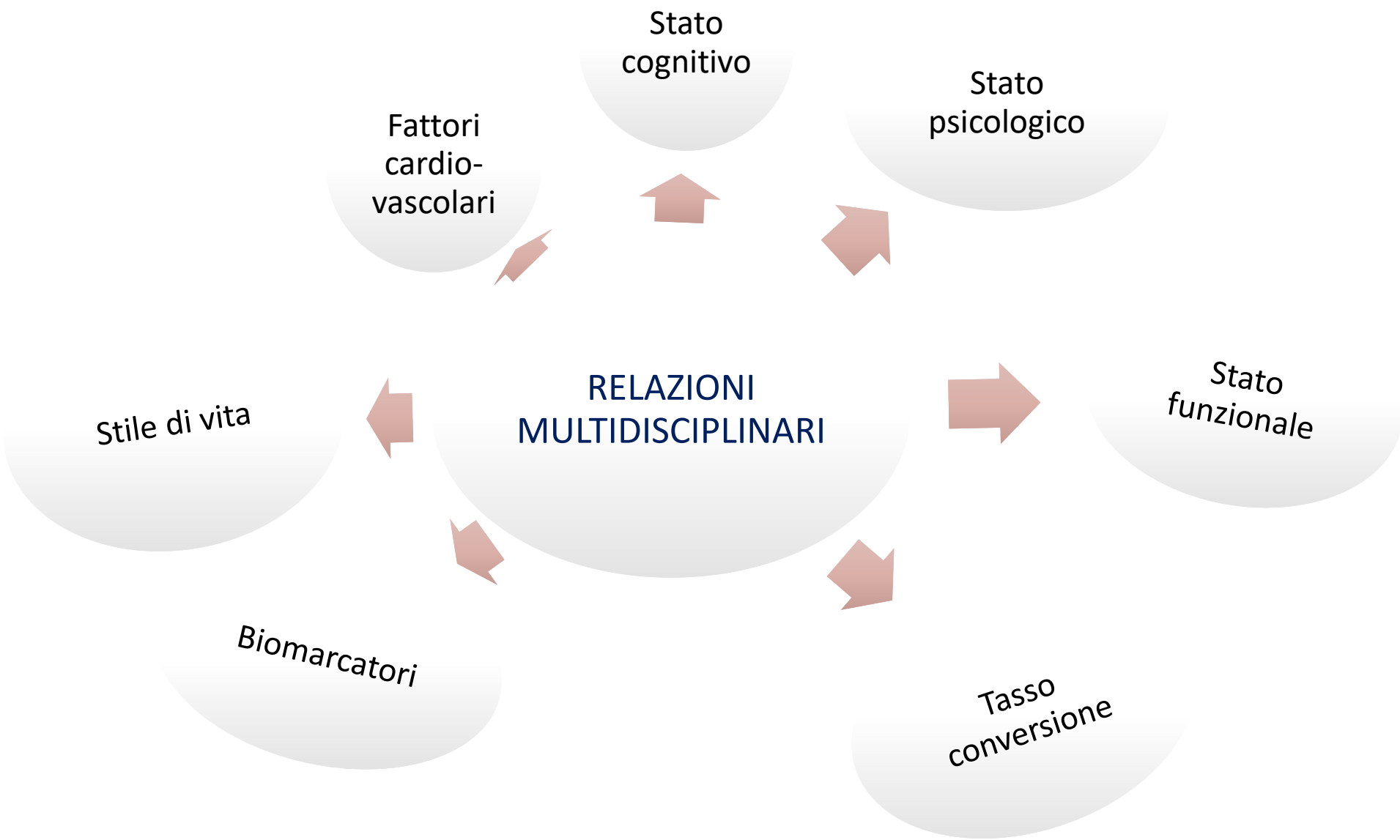
Centri sociali per anziani

Dissemination

Flow Chart dello studio



Outcomes

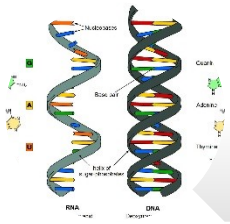

Stato cognitivo
Fattori cardio-vascolari
Stato psicologico
Stile di vita
RELAZIONI MULTIDISCIPLINARI
Stato funzionale
Biomarcatori
Tasso conversione

Biomarcatori

Micronutrienti

Brain-Derived Neurotrophic Factor (BDNF)

Parametri di laboratorio



Espressione genica su RNA

Intervento del Gruppo Sperimentale

Team multidisciplinare

6 mesi

Sessioni di 180 minuti/settimana

Table 2 Example syllabus of classes

Classes			
First class	Welcome to participants. Subjects can share their experience about cognitive impairment or ask questions.	75 min of psycho-education about healthy lifestyle aimed to prevention of dementia and other pathologies	90 min of dance. Explanation about the aim of adapted tango
Second class	Welcome to participants. Questions of participants.	75 min of psycho-education and health advice about the cognitive enhancement for prevention and management of cognitive disorders. Assignment of homework	90 min of adapted tango, as indicated in "Methodology"
Third class	Welcome to participants. Questions of participants. Revision of homework assigned the previous week.	75 min of cognitive stimulation aimed to learning of mnemonic strategies. Assignment of homework	90 min of adapted tango, as indicated in "Methodology"
Fourth class	Welcome to participants. Questions of participants. Revision of homework assigned the previous week.	75 min of music therapy. Assignment of homework	90 min of adapted tango, as indicated in "Methodology"

Aging Clinical and Experimental Research
https://doi.org/10.1007/s40520-020-01504-4

Intervento del Gruppo di Controllo

Analisi Statistica

Approccio esplorativo per comparazione	Valutazione dell'andamento temporale della variabile	Valutazione effetto intervento
Analisi descrittiva	ANOVA MISURE RIPETUTE	Modelli lineari generalizzati
Correlazioni tra variabili	Calcolo medie marginali nelle fasi	Variabile caso/controllo
Costruire modelli longitudinali	Confronto con test post-hoc Bonferroni differenze vari tempi;	Correzione per fattori confondenti

Table 1 Clinical, functional, and neuropsychological assessment

Instruments
Cognitive assessment
Clinical Dementia Rating Scale—CDR [20]
Memory Complaint Questionnaire—MAC-Q [21]
Montreal cognitive assessment—MoCA [22]
Mini mental state examination—MMSE [23]
Rey auditory verbal learning test—RAVLT [24]
Phonological verbal fluency—PVF [24]
Supra-span of Corsi [25]
Semantic verbal fluency—SVF [26]
Attentive matrices [26]
Trail making test A−B—TMT A–B [27]
Psychological assessment
Depression Anxiety Stress Scale—DASS [28, 29]
Geriatric Depression Scale-15—GDS-15 [30]
Psychological Well-Being Scales—PWB [31, 32]
SF-36 (36 health survey) [33]
Functional assessment
Basic activities of daily living—ADL [34]
Instrumental activities of daily living—IADL [35]
Berg Balance Scale—BBS [36]
6-min walking test—6MWT [37]
Social network
Lubben Social Network Scale—LSNS [38]
Lifestyle characteristics and physical activity
Physical Activity Scale for the Elderly—PASE [39]
Lifestyle Questionnaire

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Caratteristiche del campione (N=101) – dati preliminari

	EG (N=53)	CG (N=48)	Sign.[a]
Età (anni)	77.7 (6.6)	78.4 (6.2)	n.s.
Sesso F (%)	73.2%	75.5%	
Scolarità (anni)	9.3 (5.3)	8.9 (5.6)	n.s
MMSE	27.1 (1.9)	27.2 (1.7)	n.s.
MOCA	22.3 (2.8)	21.8 (2.7)	n.s.
Test delle 15 Parole di Rey (m. immediata)	33.4 (9.4)	32.7 (8.4)	n.s.
Test delle 15 Parole di Rey (m. differita)	5.9 (4.3)	5.6 (3.4)	n.s.
Test delle Matrici Attentive	49.1 (7.0)	48.9 (7.7)	n.s.
MAC-Q	26.2 (2.8)	25.9 (3.8)	n.s.
GDS - 30	3.6 (2.5)	3.7 (2.8)	n.s.
DASS (depressione)	5.2 (5.4)	4.9 (5.5)	n.s.
DASS (ansia)	4.5 (4.2)	3.9 (2.7)	n.s.
BADL	5.8 (0.5)	5.7 (0.5)	n.s.
IADL	7.4 (1.2)	7.3 (1.3)	n.s.

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